END TERM EXAMINATION

FIRST SEMESTER (B.TECH) DECEMBER-2024

Paper Code: ES-119 ***Subject: Manufacturing Process***

Time: 3 Hours ***Maximum Marks: 60***

Note: Attempt any five questions in all including question no.1 which is compulsory. Select one question from each unit.

Q1 (a) Why riser is not used in pressure die casting? **(2x10=20)**

(b) In welding a mild steel sheet using an oxy-acetylene flame, the total amount of acetylene consumed was 8.0 ltrs. Calculate the consumption of oxygen from the cylinder.

(c) What is directional solidification as applied in casting?

(d) What is strain hardening?

(e) Differentiate between blanking and punching in sheet metal operation.

(f) Why direct current straight polarity is preferred for welding thick metal?

(g) Name the process by which bottles and floatable objects are made fromthermoplastics.

(h) Differentiate between toughness and hardness?

(i) What is blending and mixing in powder metallurgy?

(j) Differentiate between forward and backward extrusion in the metal forming process.

UNIT-I

Q2 (a) What are the functions of a good gating system? Describe the elements of a gating system with a neat sketch. **(6)**

(b) Explain centrifugal casting with a neat sketch. **(4)**

Q3 (a) Explain any five casting defects with neat sketches along with causes and their remedies. **(3)**

(b) Explain the construction, and working of the cupola furnace with a neat sketch. **(7)**

UNIT-II

Q4 (a) Explain autogenous, homogeneous, and heterogeneous types of welding processes with suitable examples. **(6)**

(b) What do you mean by the selection of electrodes in Electric Arc welding? How electrode is specified? **(4)**

Q5 (a) Describe the principle of Electric resistance welding. Explain spot welding with a neat sketch. **(3)**

(b) What is the principle of heat generation in gas welding? Why acetone is mixed in an acetylene cylinder? Explain with neat sketches various types of flames and their applications. **(7)**

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UNIT-III

Q6 (a) Differentiate between hot working and cold working processes with suitable example. (6)

(b) Compare the metal forming process with the casting and machining manufacturing processes. (4)

Q7 (a) Differentiate between closed die forging and open die forging operation. (4)

(b) Explain sheet metal cutting operations with neat sketches. (6)

Q8 (a) What is powder metallurgy? Write its advantages, applications, and limitations. (6)

(b) Explain the methods for metal powder production. (4)

Q9 (a) What are the various methods for moldingthermoplastic and thermosetting plastics? Describe injection molding with a suitable sketch. (6)

(b) Explain the compression and transfer molding processes in plastic manufacturing. (4)

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